

# Notice of Allowability

Application No.

10/825,816

Examiner

Chuc D. Tran

Applicant(s)

KIM ET AL.

Art Unit

2821

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 8/10/07.
2. ☒ The allowed claim(s) is/are 1,3,5-7,9-11 and 13.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 11/12/07.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

**DETAILED ACTION**

***EXAMINER'S AMENDMENT***

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Steve Cha on November 12, 2007.

The application has been amended as follows:

Claim 1, line 9, "narrower or wider" has been changed to - - narrower - -;

Claim 5, line 7, "narrower or wider" has been changed to - - narrower - -;

Claim 11, lines 8 and 9, "narrower or wider" has been changed to - - narrower - -.

***Drawings***

2. The drawings were received on 4/16/04. These drawings are accepted.

***Allowable Subject Matter***

3. Claims 1, 3, 5-7, 9-11 and 13 are allowed.
4. The following is an examiner's statement of reasons for allowance:

Prior art fails to disclose or suggest in combination with the remaining claimed limitation: the gain waveguide is disposed on the grating layer in a direct contact with the first grating and the first and second gratings have reflection factors different from each other and the gain wave guide includes mode conversion regions formed at both sides of the gain waveguide, the mode conversion regions having a width which

becomes narrower as it goes to a corresponding end of the semiconductor optical amplifier in claim 1, claims 3 and 9-10 are allowed since they are dependent on claim 1.

Prior art fails to disclose or suggest in combination with the remaining claimed limitation: the gain waveguide is disposed on the grating layer in a direct contact with the first grating and the gain waveguide includes a mode conversion region formed at one end portion of the gain waveguide, the mode conversion region having a width which becomes narrower as it goes to an end adjacent to the semiconductor optical amplifier in claim 5, claims 6 and 7 are allowed since they are dependent on claim 5.

Prior art fails to disclose or suggest in combination with the remaining claimed limitation: the gain waveguide is disposed on the grating layer in a direct contact with the first grating and the gain wave guide includes mode conversion regions formed at both sides of the gain waveguide, the mode conversion regions having a width which becomes narrower as it goes to a corresponding end of the semiconductor optical amplifier in claim 11.

Prior art fails to disclose or suggest in combination with the remaining claimed limitation: a high reflection layer disposed on a second end surface of the semiconductor optical amplifier, wherein the gain waveguide is disposed on the grating layer in a direct contact with the first grating in claim 13.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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*Inquiry*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuc D. Tran whose telephone number is (571) 272-1829. The examiner can normally be reached on M-F Flex hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC  
November 5, 2007

 11/13/07

DOUGLAS W. OWENS  
SUPERVISORY PATENT EXAMINER